January 25, 1974

MEMORANDUM TO TOBACCO INDUSTRY FILE

The following memorandum records what transpired at the meeting between industry and Federal Trade Commission representatives at the Commission on January 18, 1974, relating to the Commission's "tar" and nicotine testing. Present for the Commission were: Harold Pillsbury, director of the Commission's laboratory; James O'Connor, Commission scientific director; Charles Marx, statistician; and Russ Hatchl and Richard Herzog, Commission attorneys. Present for the industry were: Horace Kornegay, Dr. Alex Spears, Dr. William Steele, Dr. Herbert Arkin, HTA and AJT.

Mr. Kornegay began the meeting by stating that the industry appreciated the opportunity to discuss aspects of the Commission's testing which relate to the integrity of the Commission's results and are therefore of importance to the Commission and to the public as well as to the industry.

HTA stated that the accuracy of the Commission's results was of particular importance because of the industry's voluntary agreement to publish the Commission's "tar" and nicotine figures in cigarette advertising.

AJT introduced Dr. Arkin and stated that Dr. Arkin would summarize his analysis of the Commission's

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last round of testing and that copies of this analysis and the one prior to it would be made available to the Commission at the conclusion of the meeting.

Dr. Arkin then summarized his analysis of the latest round of Commission testing data. He began by noting that calculational errors had increased in the last round of testing and that many figures were illegible. Dr. Arkin distributed a copy of his summary of calculational errors, which is attached as Exhibit 1 hereto.

Dr. Arkin next stated that he has been very disturbed by the large number of values obtained in testing which have been deleted in the Commission's calculations. He stated that proper use of any technique for excluding outliers permitted the discarding of only a small number of values and that better technique required that values only be discarded where there was some assignable cause for the high or low value. A summary of deletions was distributed by Dr. Arkin, and a copy is attached as Exhibit 2 hereto. Dr. Arkin then stated that in addition to these deletions many other values were excluded by the Commission by a process of pasting new results over old ones on the Commission's laboratory sheets. He observed that in his view there is no justification for this practice.

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Dr. Arkin next discussed variations in the level of the tests performed by the Commission as reflected by shifts in monitor values either for one day or a whole series of days during a single test. These shifts were accompanied by a corresponding shift in a majority of the brands smoked on those days. Dr. Arkin suggested that this problem could be solved if the Commission maintained process control charts which would indicate when there had been a deviation and would enable the Commission to stop testing and correct the source of the deviation.

Mr. Herzog asked if it were possible that the defect were in the monitor and that monitor values would shift comparably in all laboratories at the same time.

Dr. Arkin stated that this was extremely unlikely.

Mr. Hatchl asked how great the shifts in the monitors were.

Dr. Arkin replied that these shifts in monitors were as much as 0.9 mgm. of "tar."

Mr. Herzog asked what the TITL's policy was on discarding data.

Dr. Steele stated that he discarded values only where there was some assignable cause.

Dr. Arkin then discussed the double rounding which had been done in the last round of Commission results

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and the inconsistencies which this had produced in the Commission's results.

Mr. Pillsbury stated that this problem had been caused by the computer, that it had been solved, and that it would not occur again. Mr. Pillsbury also stated that a statement would be included in the next Commission report of test results explaining the policy on rounding but that the basic format for presentation of results would be retained.

Mr. Hatchl asked what sources of experimental error could give rise to changes which would be reflected by the control chart.

Dr. Spears explained some of the sources of error, including humidity, variations in smoking equipment, variations in the spectrophotometer, and temperature variations.

AJT illustrated a process control chart which showed experimental deviations. AJT then asked Pillsbury the reason for the Commission's pasting over of results.

Mr. Pillsbury stated that if the monitor values for any day fell outside of certain limits, then the entire run would be discarded and a new column would be pasted over the discarded data on the card used to record data. This new column would be used to record data from a resmoking of this run. Mr. Pillsbury stated that the deletions

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(as contrasted with the paste-overs) were done by following the Dixon and Massey outlier test and that the Commission laboratory had rigid rules for deleting data. A copy of the Commission's rules for deleting data was distributed and is attached as Exhibit 3 hereto.

Dr. Arkin questioned the use of the Dixon and Massey outlier technique when dealing with testing of a product with inherent variability such as cigarettes.

Mr. Marx stated that the Commission was in a quandary because it had much data, some of which was spurious and might prejudice the results.

HTA stated that it was impossible to determine which data was spurious.

AJT stated that quite apart from the problem of deleting outliers, there was no justification for pasting over data. The original data, even if excluded from the calculations, should be retained to permit defects in the Commission's testing to be found.

Mr. Herzog asked why values which exceeded the average by certain limits should be retained.

AJT stated that these values might result from the different storage conditions to which cigarettes are exposed and should be included if the tests are to represent cigarettes available to consumers. AJT also stated

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that inclusion of these results might not change the mean values for brands, but might affect only the precision of the results.

Dr. Spears stated that he would not be concerned if the Commission used an outlier technique to discard a very small percentage of data, but that it was improper to discard a large percentage of all data as the Commission did. Dr. Spears stated that comparison of FTC and TITL results on the last test by means of regression analysis showed reasonably good agreement. On the prior test agreement had been poor because the Commission lacked sufficient controls to detect an experimental shift in an experimental condition such as humidity.

Dr. Arkin distributed his summary of Commission paste-overs, which is attached as Exhibit 4 hereto.

AJT asked why the last round of testing showed almost no paste-overs for monitors, but many for brand values.

Mr. Pillsbury stated that monitor values accompanying brand paste-overs had not been pasted over, but they had not been included in the calculations.

Dr. Arkin suggested that instead of pasting over data, the Commission, if it was determined to exclude whole runs, should at least keep the data and stamp it

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discarded. This would distinquish this data from other data which is excluded by the outlier technique and stamped deleted.

HTA stated that the industry had reserved and continues to reserve the right to object to any aspects of the Commission's methodology in the future or to propose any changes.

Mr. Kornegay suggested that the Commission consider publishing its results twice a year on regular dates to facilitate use of these figures in advertising.

Mr. Hatchl stated that this might not always be possible.

Mr. Kornegay suggested as an alternative that the industry be given a reasonable amount of advance notice of when the results would be likely to appear.

AJT distributed copies of Dr. Arkin's analyses of the last two Commission tests. AJT stated that this industry group would be available for further consultation on the subjects covered at this session if that was desired by the Commission and that the industry might want to suggest another meeting in the future to discuss the subjects covered at this meeting as well as related subjects.

Allan J. Topol

Enclosures

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